



Mission Impossible?

Reducing length of stay of COPD exacerbation in an acute regional hospital

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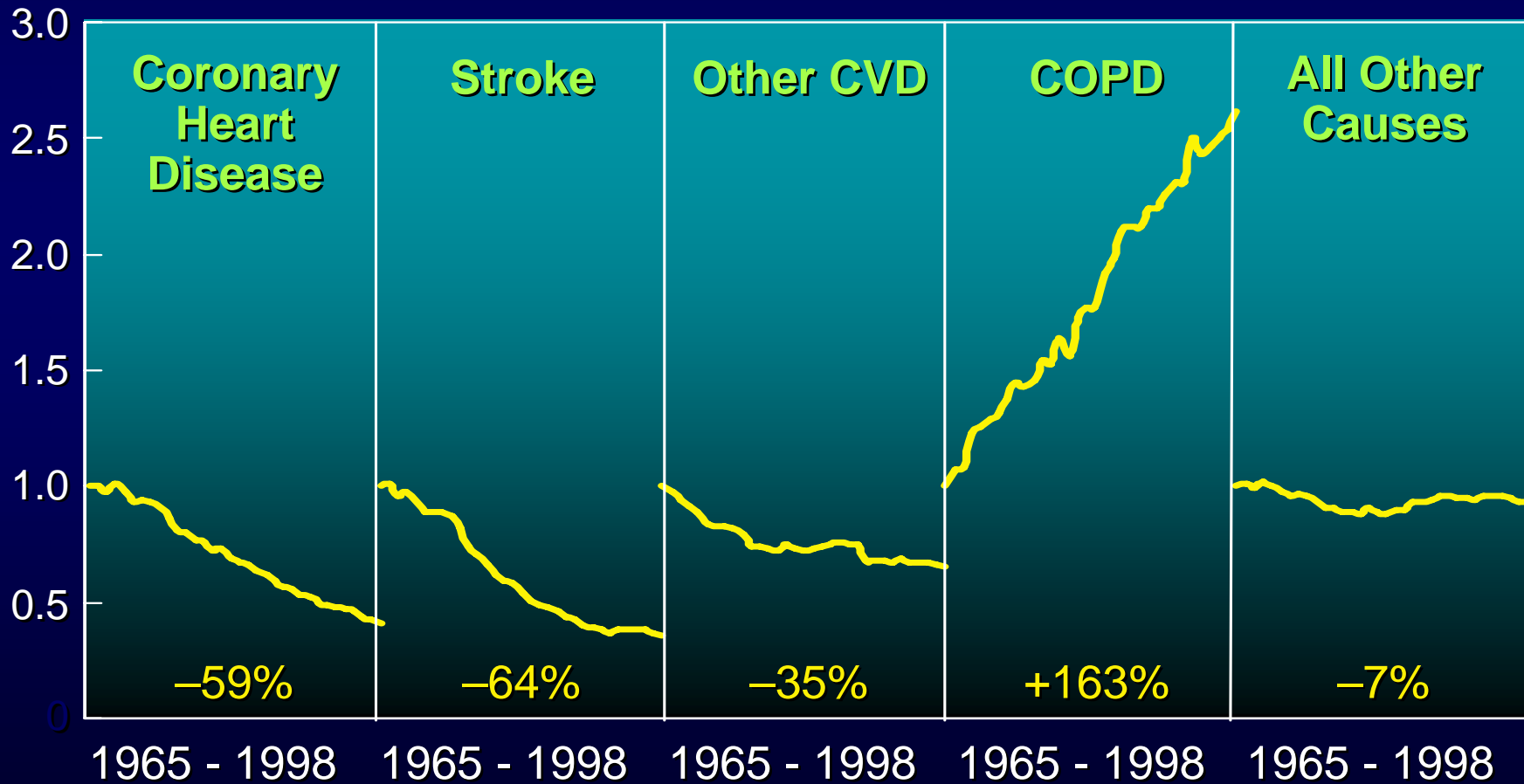
Pulmonary Unit, Haven of Hope Hospital



Percent Change in Age-Adjusted Death Rates, U.S., 1965-1998

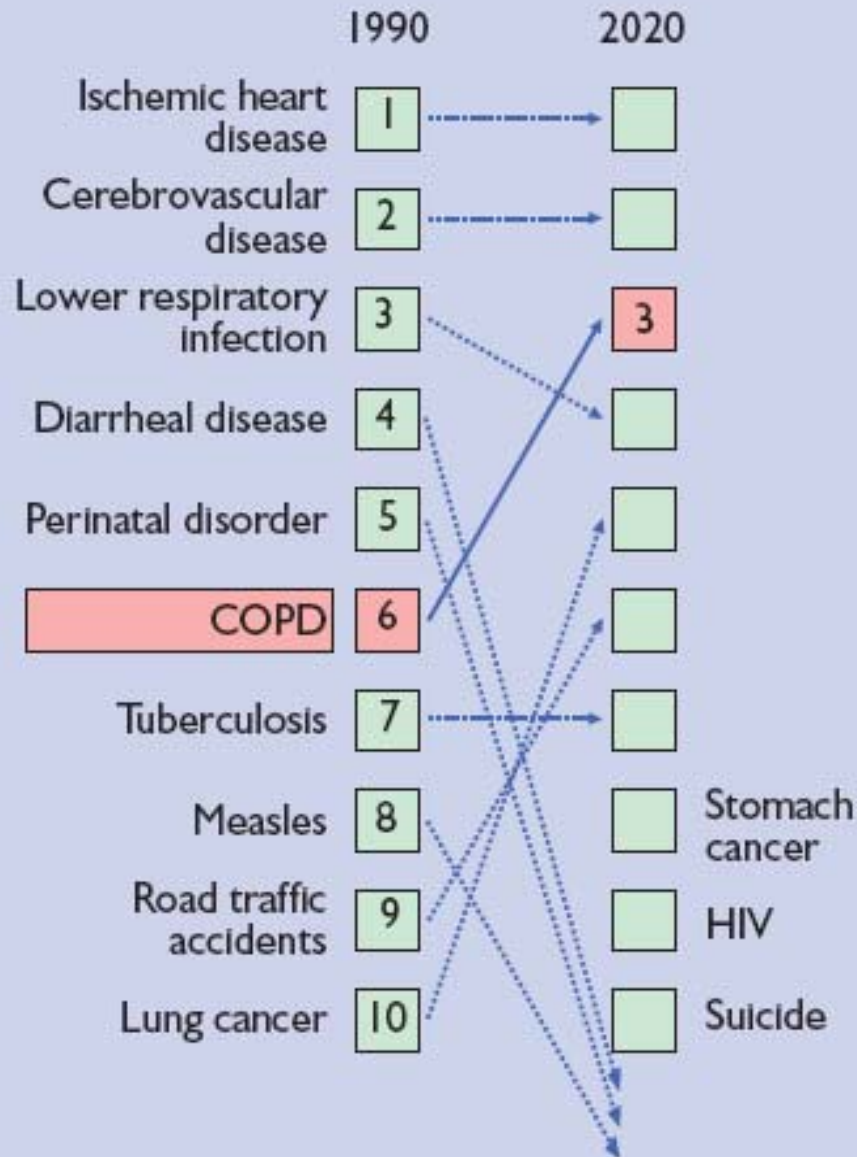


Proportion of 1965 Rate



Source: NHLBI/NIH/DHHS

World-wide Mortality 1990-2020





Hong Kong - COPD



- Currently the 5th leading cause of death
- Occupies 9% of all medical bed days of HA

Imperative to reduce the burden of hospitalisation
without incurring risks



Methods



- Descriptive study
- Review the strategies and programmes adopted primarily for reducing average LOS (aLOS) of COPD patients in UCH from 2000 – 2007
- Retrieval of data from Clinical Data Analysis & Reporting System (CDARS) of HA
 - aLOS
 - 28-day readmission
 - Mortality
- Compared with HA benchmarks



Results



7 programmes/strategies were developed during 2000 – 2007

1. Concentrating COPD patients to specialist beds
2. Mixed specialist-led and specialist-provided care
3. Promoting a 'right-at-the-first-time' culture
4. Enhancing collaboration with rehabilitation hospital
5. Pioneering a community COPD care programme
6. Pioneering a supported early discharge programme
7. Pioneering a home ventilation programme and an RCT of home ventilation for COPD patients



1. Concentrating COPD patients to specialist beds



Traditional model

- COPD patient as general patients
- Randomly assigned to be cared by general or other specialist physicians
- Adv: more doctors have exposure to COPD patients
- Disadv: may not be up to date on current international guideline; difficult to develop programme or conduct trials; difficult to innovate novel strategies



Designated COPD beds

- Under specialist care
- Defined accountability w.r.t. key performance indicators
- Adv: conducive to guideline adherence and innovation
- Disadv: seen to be expanding territory; limited by resource/manpower (16 beds in UCH)



2. Mixed specialist-led and specialist-provided care



Traditional model

- Patient attended by general trainees
- 'Second-round'/Supervised by general physician



UCH pilot

- COPD patients seen by trainee and respiratory specialist as a team
- BOTH do first round on patients with hand-over of cases
- Adv: specialist has first hand information on patient to decide most cost-effective care
- Disadv: ? ↓ training (quite the contrary); staff sentiment (generally embracing)



3. Right-at-the-first-time culture



Right people, right place, first time

- Ward round – time saving
- Rapid and accurate
 - Diagnosis (COPD symptom mimicked by many other diseases)
 - Assessment
 - Treatment
 - Triage
- Examples of wrong diagnosis
 - CHF
 - PE
 - Overlap syndrome
 - Pneumoconiosis
 - Neuromuscular disease



4. Enhanced collaboration with rehabilitation hospital



Traditional

- Patients randomly distributed in various ward
- Most patients put on waiting list to rehabilitation unit – long wait
- Nobody is accountable
- Nobody is doing triage
- Potential wastage



UCH/HOHH

- Regular meeting
- Easy to feedback
- Well defined accountability
- Most COPD patients can be triaged by respiratory specialists
 - Too well – can be discharged
 - Too sick – keep in acute hospital
- Avoid transfer of patients with
 - No motivation to rehabilitation
 - Assessed to have poor rehabilitation potential
- Arranging alternative care plan
 - e.g. placement, etc.
- Shortening of waitlist and reduce wastage, rational use of rehabilitation bed



5. Pioneering a community COPD care programme

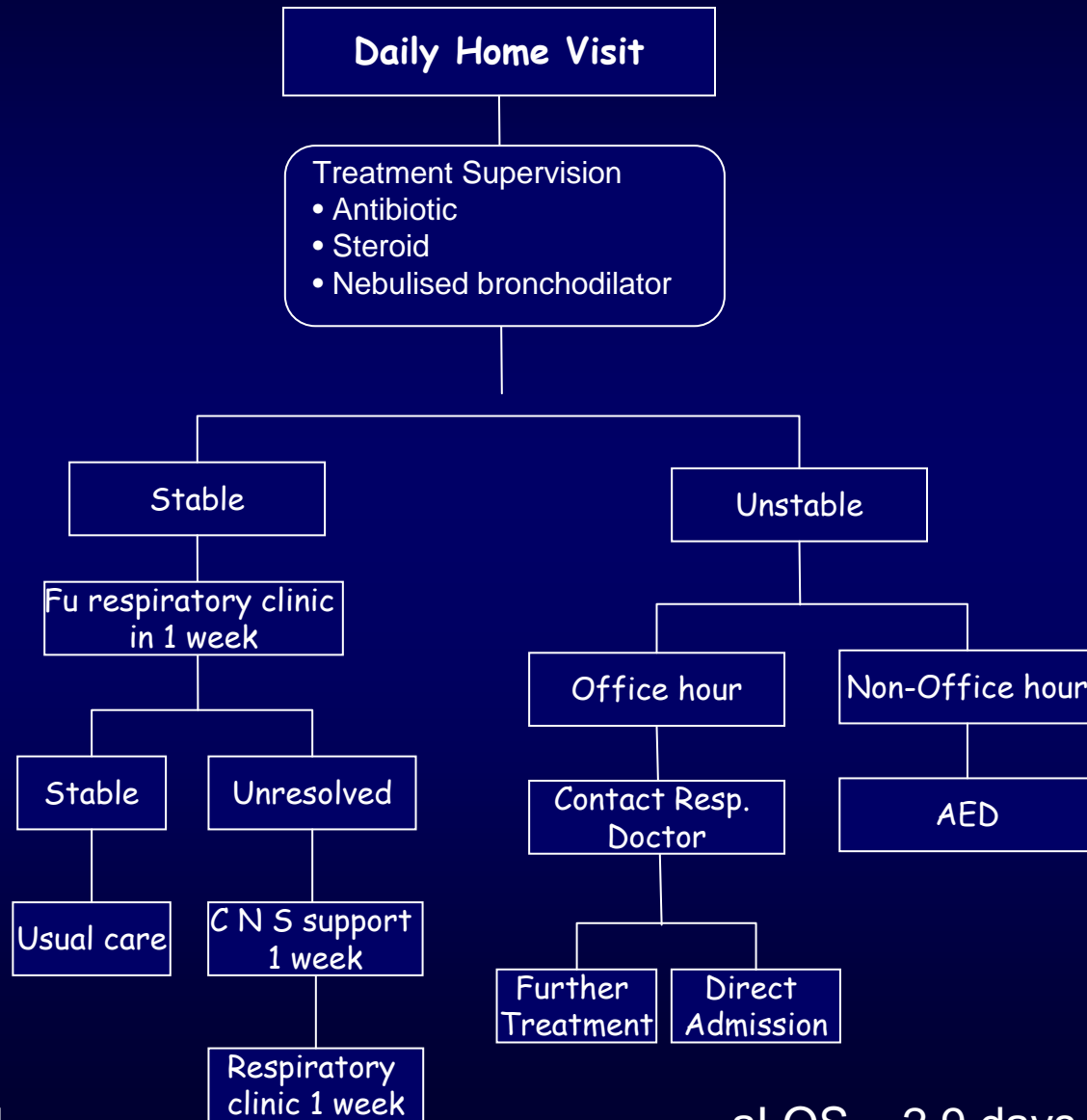


Community Pulmonary Care Programme (CPCP)

- CNS led
- Home visit + attending rehabilitation class
 - Drug supervision
 - Use of medical equipments
 - Physical exercise in community centre
 - Enhancing informal support network
 - Morale boosting



6. Pioneering an early supported discharge programme

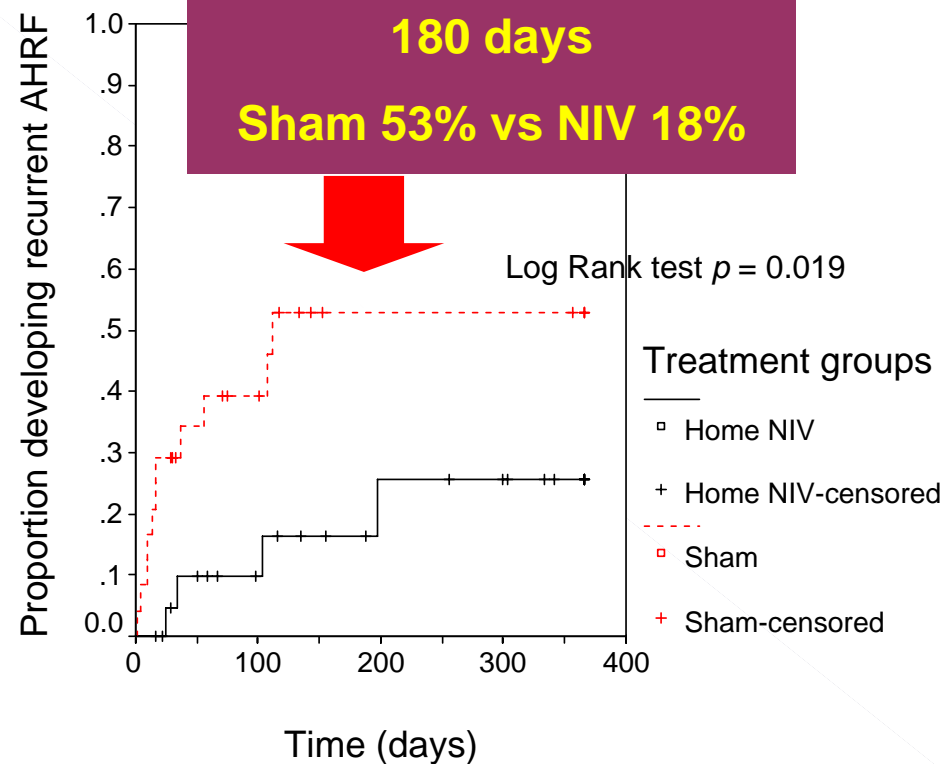




7. Pioneering a home ventilation programme for respiratory failure

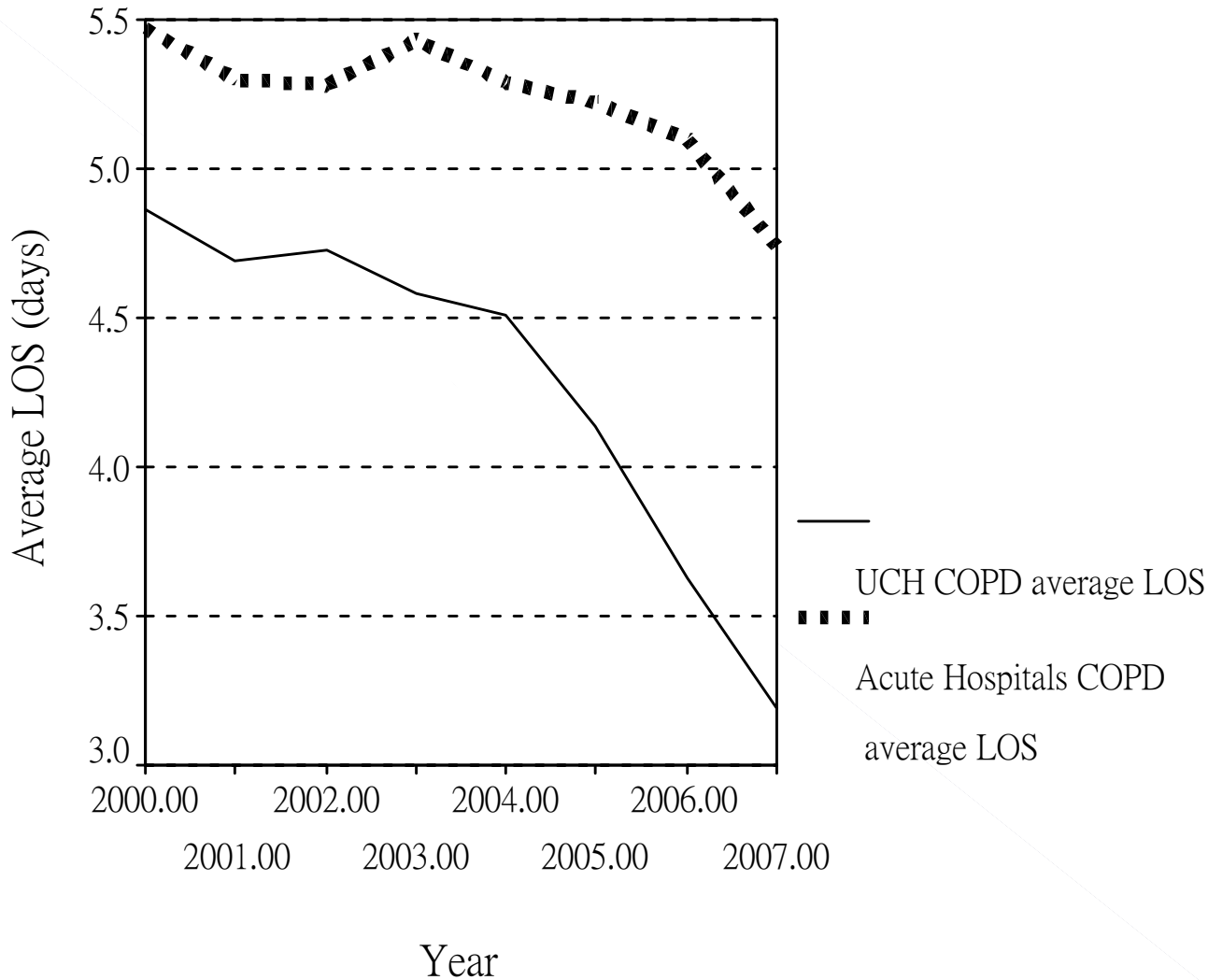


- End stage COPD patients prone to recurrent episodes of respiratory failure requiring admission and ICU care
- UCH is one of the major providers of home ventilation in HK, the only HA hospital listed on international directory (<http://www.ventusers.org/net/VentDIR.pdf>)
- Conducting an RCT on home ventilation for COPD www.clinicaltrials.gov [NCT00429156]





Results (1)



UCH aLOS for COPD:
From 4.9 to 3.2 days
(Trend, $p < 0.001$)

HA benchmark:
From 5.5 to 4.7 days
(Difference, $p = 0.012$)



Results (2)



- UCH COPD mortality ($1.1 \pm 0.3\%$) significantly lower than HA benchmark ($2.1 \pm 0.4\%$) ($p < 0.001$)
- No significant increase in transfer to rehabilitation hospital
- No significant increase in aLOS in rehabilitation hospital
- No significant increase in 28-day readmission rate



Paradigm shift



Reduce COPD readmission

- One-dimensional
- May perhaps help to improve care in a general medical practice at the very beginning
- Not in a specialist practice with optimal care in place
- May generate unnecessary demand – the best way to reduce readmission is not to discharge the patient!
- Unrealistic-COPD exacerbation often not predictable, seldom preventable – air pollution, flu



Reduce avoidable hospitalisation

- More challenging
- Multi-dimensional approach and evaluation
 - Prevent admission
 - Optimal in-patient care
 - Post-discharge care
- Involve conscious and calculated risk taking
 - e.g. early supported discharge
- More community involvement, multi-disciplinary collaboration and patient empowerment
- Realistic - Acknowledges the inevitability of COPD exacerbation, yet reduces the overall cost of treatment without compromising results

Mission impossible

- Unrealistic
- May generate unnecessary demand



Mission possible

- Realistic and practical
- Demand innovative strategies



Conclusion



- A multi-pronged approach in acute regional hospital may reduce aLOS in COPD exacerbations without a significant increase in risk
- A paradigm shift promoting reduction in avoidable hospitalization underpins various innovations to achieve this ends



Future directions



- 1 ward for COPD and NIV beds
- Telemedicine and first aid treatment at community center
- Enhanced triage at AED
- Enhancing supported discharge to include O2-dependent pt.
- Interface with ambulatory care centre
- Designated COPD clinic
- Build a patient registry

Support needed:

1. Manpower (Doctors, Specialist Nurses, CNS)
2. IT
3. Equipment e.g. O2 concentrator
4. Community support – especially on patient's expectations



Thank you

Q & A